Claims

1. Heat exchanger (10) between a cooling circuit and an exhaust-gas line of an internal combustion engine that comprises a coolant inflow (26) and a coolant return (28) for coolant ducts (14), as well as an exhaust-gas inlet (30) and an exhaust-gas outlet (32) for exhaust-air ducts (36), characterized in that it is arranged in a main exhaust-gas flow (34), and that a shutoff device (20) is provided in the coolant inflow (20).

2. Heat exchanger (10) according to Claim 1, characterized in that a gas reservoir (16) is connected at a high point (24) of the coolant ducts (14), from which, when the shutoff device (20) is closed and an upper limit temperature of the coolant is reached, gas is directed from the gas reservoir (16) into the coolant ducts (14) and displaces the coolant from the heat exchanger (10), and that the gas is returned to the gas reservoir (16) shortly before the shutoff device (20) is opened.

3. Heat exchanger (10) according to Claim 2, characterized in that the gas reservoir (16) is designed as a bellows, on one face (48) of which a connecting line (18) is arranged and on the opposite face (50) of which an actuator (22) acts.

4. Heat exchanger (10) according to Claim 3, characterized in that the actuator (22) is operated electrically, hydraulically and/or pneumatically.

5. Heat exchanger (10) according to one of the preceding claims, characterized in that it is arranged in a main exhaust-gas flow (34) in the direction of flow behind a catalytic exhaust-gas converter.

6. Heat exchanger (10) according to one of the Claims 1 or 5, characterized in that, between the exhaust-gas inlet (30) and the exhaust-gas outlet (32), a bypass line (56) is provided, on the branch of which a shutoff device (58) is

arranged in order to control the exhaust- gas inlet (30) and the bypass line (56) in complementary fashion.